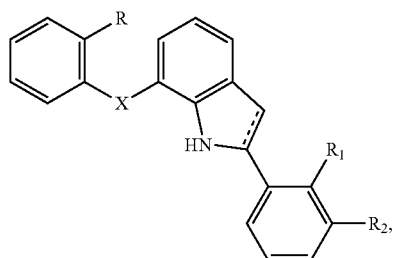


We claim:

1. A small molecule having the structure of Formula (II):



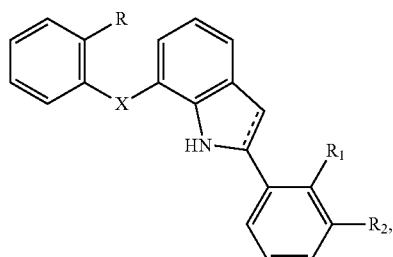
(II)

wherein:

R, R₁, and R₂ are independently selected from H, CH₂OH, COOH or COOCH₃; and

X is CH₂, NH, O, NCH₃, or SO₂.

2. A method for restoring or preserving cholesterol efflux in a cell infected with Human Immunodeficiency Virus (HIV) comprising delivering to the cell an effective amount of a composition or formulation comprising a small molecule of Formula (II) or an analog or derivative thereof:



(II)

wherein:

R, R₁, and R₂ are independently selected from H, CH₂OH, COOH or COOCH₃; and

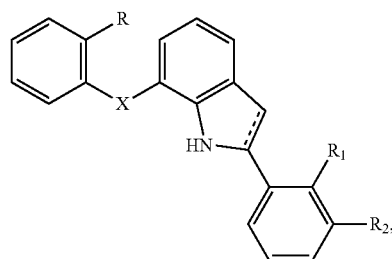
X is CH₂, NH, O, NCH₃, or SO₂.

3. The method of claim 2, wherein the small molecule binds to at least one amino acid residue on the Nef protein, wherein the at least one amino acid residue is selected from the group consisting of a lysine at amino acid position 4, a serine at amino acid position 6, a lysine at amino acid position 7, and a tyrosine at amino acid position 124.

4. The method of claim 2, wherein the small molecule binds to at least one amino acid residue on the Calnexin protein, wherein the at least one amino acid residue is selected from the group consisting of an aspartic acid at position 90, a glutamic acid at amino acid position 529, a glutamic acid at amino acid position 532, and a glutamic acid at amino acid position 533.

5. The method of claim 2, wherein preventing or decreasing the interaction between the Nef protein and the Calnexin protein results in at least partial restoration of ATP-Binding Cassette A1 (ABCA1) activity.

6. A method for treating or preventing atherosclerosis in a subject infected with HIV comprising administering to said subject an effective amount of a composition or formulation comprising a small molecule of Formula (II):



(II)

wherein R, R₁, and R₂ are independently selected from H, CH₂OH, COOH or COOCH₃; and

X is CH₂, NH, O, NCH₃, or SO₂; and

wherein the small molecule prevents or decreases an interaction between a Nef protein and a Calnexin protein.

7. The method of claim 6, wherein the small molecule binds to at least one amino acid residue on the Nef protein, wherein the at least one amino acid residue is selected from the group consisting of a lysine at amino acid position 4, a serine at amino acid position 6, a lysine at amino acid position 7, and a tyrosine at amino acid position 124.

8. The method of claim 6, wherein the small molecule binds to at least one amino acid residue on the Calnexin protein, wherein the at least one amino acid residue is selected from the group consisting of an aspartic acid at position 90, a glutamic acid at amino acid position 529, a glutamic acid at amino acid position 532, and a glutamic acid at amino acid position 533.

9. The method of claim 6, wherein preventing or decreasing the interaction between the Nef protein and the Calnexin protein results in at least partial restoration of ATP-Binding Cassette A1 (ABCA1) activity.

10. A method for screening for a small molecule that restores or preserves cholesterol efflux in a cell by inhibiting or decreasing an interaction between a Nef protein and a Calnexin protein comprising:

incubating a cell expressing a full-length Nef protein or a segment of the full-length Nef protein and a full-length Calnexin protein or a segment of the full-length Calnexin protein with a small molecule of interest;

assaying the incubated cell for cholesterol efflux; and

assaying the incubated cell for a level of binding between the full-length Nef protein or the segment of the full-length Nef protein and the full-length Calnexin protein or the segment of the full-length Calnexin protein,

wherein an increase in cholesterol efflux and a decrease in the level of binding as compared to a control is indicative of restoration or preservation of cholesterol efflux by inhibiting or decreasing an interaction between the Nef protein and the Calnexin protein as a result of incubation of the cell with the small molecule of interest.

11. The method of claim 10, further comprising virtually screening a library of small molecules for a small molecule that is predicted to bind to or interact with at least one of the full-length Nef protein or the segment of the full-length Nef protein and the full-length Calnexin protein or the segment of the full-length Calnexin protein.